SAFETY RISKS ASSOCIATED WITH HELPING RECIPROCITY: INFLUENCES OF THE INITIAL HELPING SOURCE

A research project submitted in partial fulfilment of the

requirements for the Degree of Master Science in Applied Psychology

At the University of Canterbury

By Sarah Louise Adams

2015

Contents

Acknowledgements ..... **i**

List of Tables ..... **ii**

Abstract **1**

1. Introduction **2**

1.1 Overview 2
1.2 Health and Safety Globally and in NZ 3
1.3 New Employee Safety Risk 4
1.4 Organizational Citizenship Behaviour 5
1.5 Motivators and Pathways to Helping for New Employees 7
1.6 The Why, What, When, and Who of New Employees Receiving Help 10
1.7 Helping Reciprocity 11
1.8 What makes reciprocal helping bad in a high risk workplace? 15
1.9 Present Study 18

2 Experiment 1 ..... **20**

2.1 Method 20
2.1.1 Design 20
2.1.2 Participants 20
2.1.3 Experimental Materials 21
2.1.4 Procedure 23
2.2 Results 23
2.3 Summary 30

3 Experiment 2 ..... **30**

3.1 Method 30
3.1.1 Design 30
3.1.2 Participants 30
3.1.3 Experimental Materials 31
3.1.4 Procedure 32
3.2 Results 32

4 Discussion **38**

4.1 General Discussion....38
4.2 Implications....41
4.3 Strengths and Limitations....43
4.4 Future Research....44
4.5 Conclusion....45
5 References....46
Appendix A....54
Appendix C....62
Appendix D....63
Appendix E....65
Appendix F....66

Acknowledgements

First and foremost I would like to express my gratitude to my research supervisor Dr Chris Burt. Your knowledge, guidance, and support throughout this research project were incredibly valuable. Thank you for your open door policy and skype meetings, they were a great help during this process. Thanks are also due to my secondary supervisor Dr Katharina Näswall for your additional feedback and guidance.

A big thank you to the organisations who allowed me to approach their employees as participants, this project would not have been achievable without you. I hope you find the outcome of this research helpful.

To my APSY peers, thank you for a great two years together. I look forward to continuing our friendships. Thank you to our research group in particular, being able to bounce ideas off each of you was very helpful in the early stages of this project.

Finally, I would like to thank my friends and particularly my family for your endless support. I am forever thankful.

List of Tables

Table 1. *Pearson product moment correlations between the mean responses for the item 'feel gratitude towards Jeff' with each of the mean responses of the helping reciprocity and indebtedness items*……..……..26

Table 2. *Pearson product moment correlations between each of the gratitude, helping reciprocity, and indebtedness items and the variables job risk, team interaction, and tenure, across the helping source conditions*……...……29

Table 3. *Adjusted descriptive statistics for each item across the four conditions and repeated measures ANOVA's and ANCOVA's with the relevant covariates*……...33

Table 4. *Pearson product moment correlations between the mean responses of the item 'feel gratitude' with each of the mean responses of the helping reciprocity and indebtedness items*……...……34

Table 5. *Pearson product moment correlations between each for the gratitude, helping reciprocity, and indebtedness items and the variables job risk, team interaction, and tenure, across the helping source conditions*……...……....37

Table 6. *Adjusted descriptive statistics for each item across the four conditions and repeated measures ANOVA's and ANCOVA's with the relevant covariates*……...43

Abstract

This investigation explored reciprocal helping in the context of a high risk work environment. There were three hypotheses. Firstly, it was hypothesised that gratitude ratings would be positively related to helping reciprocity intentions. Secondly, as the helping source decreases in obligation to help, ratings of gratitude would increase. Thirdly, as the helping source decreases in obligation to help, helping reciprocity intentions would increase. This was based on the idea that when the help provided to an employee is an obligation as part of the helper's job or is paid for, it is less likely to prompt gratitude and reciprocal helping, compared to when it is a genuine act of helping which is neither required by a role nor specifically paid for. Two repeated measures experiments were carried out. In both experiments the participants read four scenarios about being helped that varied by the source of the help which formed the four conditions. In Experiment 1 (N = 24) the help was provided by an external trainer, a supervisor, a co-worker officially assigned to be the employee's mentor, and a co-worker. In Experiment 2 (N = 37) the external trainer condition was replaced with help provided by a Human Resource (HR) member. After reading each scenario the participants indicated their agreement with eight gratitude, helping reciprocity, and indebtedness items. In Experiment 1 and 2 there was a significant positive relationship between ratings of gratitude and reciprocal helping intentions. In Experiment 1 and 2 there was also a significant difference in reciprocal helping intentions across the helping source conditions. Ratings of gratitude, however, did not vary across the conditions in both Experiment 1 and 2. The results are discussed in terms of new employees entering a workplace. It is suggested that help needs to be assigned to those whose responsibility it is to train and help new employees, which should help discourage helping reciprocity.

1. Introduction

1.1 Overview

This study investigates a potential explanation as to why employees have accidents in the early stages of their employment. The research focuses on helping behaviour and its associated safety risks, and in particular why new employees might engage in helping behaviours. In New Zealand and around the world, workplace accidents continue to occur at high rates. A number of global accident statistics are highlighted in Section 1.2. Research suggests that new employees are a particular safety concern as they are involved in a large percentage of workplace accidents, this is discussed in Section 1.3.

Helping behaviours are a subtype of organisational citizenship behaviours (OCB's) that are likely exhibited by new employees (see Section 1.4). The different motivations for new employees engaging in these are discussed in Section 1.5. During the initial stage of employment, new employees themselves need help from other people in order to understand the roles and tasks associated with their job, and the rules and procedures associated with the organisation (discussed in section 1.6). New employees are likely to feel grateful for this help (discussed in Section 1.5) and in order to repay their helper, they may engage in a type of helping, known as *helping reciprocity*, the motivators of which are discussed in Section 1.7. Reciprocal helping behaviour is usually beneficial where there are no safety risks, however, in a high risk work environment, a new employee is perhaps the least equipped to exhibit helping reciprocity. Given their short tenure, new employees may lack the situational awareness, knowledge, acclimatization, and familiarity with procedures to help others, and this potentially puts them and those around them at risk. This and other reasons why reciprocal helping can be a risk are elaborated on in Section 1.8.

Section 1.9 discusses that it is predicted that helping reciprocity is at least partly driven by the source of the help, because different help-sources generate different degrees of

gratitude. Specifically, helping reciprocity might not be engaged in when the initial helper was paid to help as part of an obligation in their job, such as a trainer. However, helping reciprocity might be more likely when the initial helper has a low obligation to help but does so as a genuine act of helping. Thus the relationship between source of help, gratitude, and helping reciprocity is central to the study hypotheses and the aim of determining why new employees might be involved in more accidents.

1.2 Health and Safety Globally and in NZ

Workplace accidents continue to occur at a high rate both worldwide and in New Zealand. It is estimated that globally there were almost 360,000 fatal occupational accidents in 2003, and every day more than 960,000 workers are injured because of accidents (Hämäläinen, Takala, & Saarela, 2009). This renders health and safety a key focus, particularly in industries which inherently carry more risk of injury. In New Zealand, one to two people are killed while at work each week (Institute of Directors, 2013). In terms of injury, there were 182,900 work-related injury claims with the Accident Compensation Corporation (ACC) in New Zealand in 2013. The agriculture, forestry, and fishery industries had the highest claim rates, and the highest number of claims for occupation and industry were for trades workers and the construction industry respectively (Statistics New Zealand, 2014). Given these statistics, it is important to establish the causal factors of health and safety accidents.

There are a number of potential explanations as to why workplace accidents continue to occur at a high rate. Established contributing factors include: management action or inaction (Abdelhamid & Everett, 2000; Makin & Winder, 2008), poor hazard management (Makin & Winder, 2008), inadequate safety voicing (Lu, 2014), lack of safety training (Smith & Mustard, 2006), and unsafe acts by employees (Reason, 2000). Further investigation needs to be carried out in order to determine why accidents in the workplace continue to occur at

high rates and how this can be addressed. One widely established risk is new employees, as they have been shown to be involved in more accidents than employees of longer tenure.

1.3 New Employee Safety Risk

Across a number of industries, many authors have reported that new employees experience the majority of their health and safety accidents during the early period of their employment, particularly in the first 12 months (e.g., Bell & Grushecky, 2006; Groves, Kecojevic, & Komljenovic, 2007; Kincaid, 1996; Leigh, 1986; McCall & Horwitz, 2005; Root & Hoefer, 1979). A new employee is defined as one that is new to an organisation, regardless of their age or previous work experience (Van Zelst, 1954). In a logging industry sample Bentley, Parker, Ashby, Moore, and Tappin (2002) found that over a five year period, 44% of the injuries were by employees in the first 12 months of tenure. In an investigation of 621 fatal falls in the construction industry, Chi, Chang, and Ting (2005) found that 80.5% of those were employees in the first year of their employment. Barry (1971) found a similar trend in the coal mining industry. His research showed that 7.8% of fatalities happened in an employee's first month of tenure. South Korea's 1991-1994 national statistics showed that 95.6% of the non-fatal injuries and 92.5% of the fatal injuries involved employees in the first year of a job (Jeong, 1998). This global research shows that new employees are disproportionally involved in accidents, yet the reasons for this are not well understood.

There are a number of potential causes of workplace accidents such as conscious and unconscious risk-taking, poor hazard identification, not using personal protective equipment, flawed task guidelines, faulty safety equipment (machinery), insufficient experience on the task, device failures, and defective walking or working surfaces (Lind, 2008). Of each of the highlighted causes of accidents, new employees are perhaps most likely to have *insufficient experience on the task* and hence this might explain one of the reasons why new employees are disproportionally involved in more accidents.

An example of inexperience leading to fatality was found when a new employee died on a tree-trimming job. He was feeding a tree limb into a wood chipper, when a branch hit his back pulling him in with it, he was killed. The key issue with this accident was that he had not been assigned, let alone trained to carry out this task (National Institute for Occupational Safety and Health, 2000). Whilst new employees are likely to have inexperience that may cause them to be involved in an accident, it is important to understand the broader picture of why new employees are involved in more accidents than employees of longer tenure. Thus whilst inexperience was the cause of this accident for the employee in the example, the question is, why was he carrying out the unassigned task in the first place. A possible answer would be that he was attempting to help or engaging in OCB's, in order to show his worth. Hence the present focus is on a subtype of OCB's known as helping behaviours. The following sections will discuss these helping behaviours and why new employees in particular might engage in them, putting themselves and others at risk.

1.4 Organizational Citizenship Behaviour

The practice of OCB's are widely praised in the literature (see Organ, Podsakoff, & MacKenzie, 2005; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). OCB's involve an individual carrying out tasks that are outside of those required for their job; these are known as extra-role behaviours (Muchinsky, 2003). Organ (1988) defined OCB's as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (p.4). The literature constitutes *promotes effective functioning* as outcomes such as positive working relationships, organisational effectiveness (Podsakoff & Mackenzie, 1994), attracting and retaining the best employees (George & Bettenhausen, 1990), and co-worker and managerial productivity (Gyekye & Salminen, 2005; Organ et al., 2005). Thus OCB's

have historically been classified as positive, yet it is not widely recognised that they can also result in unforeseen negative outcomes.

Research by Burt, Banks, and Williams (2014) investigated the safety risks associated with OCB's, specifically of helping behaviours. The first author of this research was motivated to investigate this area after witnessing a fatal workplace accident as a result of OCB's aimed at improving productivity. The author observed the following:

> While delivering rubbish to a collection station, the author observed a commercial rubbish collection truck reversing towards an unloading point. The truck was operated by a crew of three, and one of these employees had exited the truck and moved behind the vehicle to guide the reversing operation. Part way through this operation the employee guiding the reversing vehicle ran towards the truck and attempted to jump onto the tail board of the moving vehicle. At this point he slipped and was run over by the vehicle. The coroners court investigation concluded that the fatal accident occurred because the crew had developed an unloading process which included two acts aimed at helping: guiding the reversing vehicle, and jumping on the tail board to release the unloading locks, and thus speeding up the unloading operation (Burt et al., 2014, p. 136).

While on previous occasions this helping process may have improved productivity, this was a safety violation and an accident waiting to happen. Within Podsakoff et al.'s (2000) OCB framework, this behaviour would be classified as helping behaviour. However this helping behaviour did not *promote effective functioning*, it led to death. Hence it is only recently that authors have begun to link the idea of OCB's with unsafe acts and safety violations (Burt et al, 2014; Burt, 2015).

There are a number of potential motivators and pathways to new employees engaging in helping behaviours. However, there is little research to explain what makes new employees in particular engage in helping in the workplace.

1.5 Motivators and Pathways to Helping for New Employees

The potential motivators and pathways behind why people might help in the workplace that will be discussed include: job insecurity, a need for a social identity, striving for respect, and as reciprocation in response to gratitude from being helped.

Firstly, feelings of job insecurity experienced by new employees could be a motivator of helping, as was recently highlighted by Burt (2015). In New Zealand, companies are entitled to use a 90-day trial period for new employees. Within the trial period an employer can dismiss an employee without the risk of legal proceedings (Employment Relations Act, 2000). Thus employees in the trial period might be motivated to find ways to help in the workplace in order to show their worth. This idea has been shown in a sample of employees in fixed-term contracts who felt insecure in their jobs (Feather & Rautner, 2004). It seems reasonable to assume that fixed-term employees and those on a 90-day trial might feel similar to each other as they both have uncertainty about the future of their jobs. Feather and Rautner (2004) found that perceived job insecurity and ratings of OCB's were positively correlated, suggesting that those in their sample were carrying out more extra-role behaviours such as helping with the motivation of securing continued employment. Therefore, new employees may attempt to find more extra-role ways to help in order to improve their long term job security.

Secondly, when joining a new organisation it is important to gain a social identity within that organisation. Social identity makes up one of the key parts of an individual's self-identity. Generally people strive to seek a positive self-identity (Ashforth & Mael, 1989). As

highlighted by the 'love' dimension of Maslow's (1943) hierarchy of needs, there is a need for belongingness and hence that of a social identity. Individuals tend to exert considerable behavioural effort in order to satisfy the need for belonging and workplace social identity (Blader & Tyler, 2009). A new employee in particular is likely to work harder in a number of ways to gain their new workplace social identity. One of the ways they might work harder is to engage in extra-role behaviours such as helping.

Thirdly, the need for respect might drive helping behaviours in the workplace. Respect in the workplace is characterised as an individual's level of acceptance and position within their workgroup as evaluated by the other members (Blader & Tyler, 2009). Respect in the workplace essentially needs to be earned. In order to earn respect, extra-role behaviours such as helping can be necessary. In a study which looked at employees and their supervisors' ratings on a number of variables including respect and extra-role behaviours, employee respect and extra-role behaviours were found to be positively correlated (Blader & Tyler, 2009). Given this research, it seems reasonable to assume that individuals gain more respect from their co-workers with the more extra-role behaviours such as helping that they carry out. Hence a desire for workplace respect could be a key factor in motivating new employees to engage in helping behaviours.

Finally, gratitude is also likely to be a motivator that prompts helping in the form of *helping reciprocity*. Gratitude is the positive emotional response felt by a recipient to a gift or an act (Algoe, Haidt, & Gable, 2008; Bartlett & DeSteno, 2006; Matthews & Green, 2010; Watkins, Scheer, Ovnicek, & Kolts, 2006). When a new employee joins an organisation they need help from other people in order to understand the roles and tasks associated with their job, and the rules and procedures associated with the organisation. In general when a person is helped they feel grateful for that help and reciprocate in order to demonstrate appreciation.

Bartlett and DeSteno (2006) suggest that it is gratitude that is the sole influence behind engagement in helping reciprocity.

It seems important to note that indebtedness, a similar construct to gratitude, is not considered to be a reason why new employees might help. Indebtedness is also felt in response to a gift or act, whereby the recipient feels that they owe the initial helper for helping them. It can be associated with feelings of discomfort, leaving recipients in a state of alertness, waiting for opportunities to pay off their debt (Greenberg, 1980; Matthews & Green, 2010; Watkins et al., 2006). Using help to pay off the debt is also characterised as helping reciprocity. The reason why indebtedness is not likely to be a cause for new employee helping reciprocity, is that the literature does not suggest that feelings of indebtedness would be as likely as feelings of gratitude when a new employee is helped. A number of studies have found gratitude and indebtedness to be independent or opposing constructs (see Matthews & Green, 2010; Rotkirch, Lyons, David-Barrett, Jokela, 2014; Watkins et al., 2006). For example, one study found that when there were expectations from the initial helper that the recipient will reciprocate, the recipient felt indebted but not grateful, and the opposite was found when there was no expectation (Watkins et al., 2006). Thus in the context of a new employee, indebtedness is not likely to be present as there should be no expectation from those who help a new employee in the early stages of their employment, as existing co-workers are likely to understand that new employees are not equipped to help them back. Therefore, they will not expect reciprocation and new employees will not feel indebted, however, they may feel grateful and want to reciprocate based on that feeling.

The present investigation is focused on initial help leading to helping reciprocity. From day one of employment, new employees need and receive a lot of help in order to understand the components of and how to do their job. This help can vary considerably in terms of why, what, when, and who. This will be discussed in the next section.

1.6 The Why, What, When, and Who of New Employees Receiving Help

There are a number factors to consider when it comes to new employees receiving help that are likely to lead to helping reciprocity. Thus there are likely a number of different responses to why, what, when, and who for new employees receiving help, and these are discussed below.

Firstly, why do new employees need help? New employees need help to acquire work-related information because without it they are not likely to be successful in their new jobs. In particular, not receiving work-related information in a high risk work environment puts new employees at risk of having an accident if they do not know what they are doing. New employees also need help regardless of their previous work experience. For example, a new employee at a timber yard who has never used a bandsaw is likely to need a lot of training on how to use it safely and other associated procedures. In addition a new employee who has worked for five years using a bandsaw at a different timber yard is still going to need help. The bandsaw might be a different make to the one they are used to, the procedures for stacking timber after it has been cut might be different, and so on. Thus regardless, of previous work experience new employees need a considerable amount of help to do their job and stay safe.

Secondly, what help do new employees need and when do they get it? It is important to realise that new employees need a lot of information, training, and settling in when they first join an organisation. They need to learn about their job, the terms of their employment, health and safety information, information about the organisation itself, develop relationships, establish a social identity, and so on. In order to satisfy these objectives they go through both formal and informal processes upon entry to a new organisation and during the following months. These processes tend to fit into two groups known as orientation and socialisation processes. Orientation processes tend to be more formal and occur anywhere

from day one to week eight, for anywhere between one to six days (Anderson, Cunningham-Snell, & Haigh, 1996; Wanous, 1992). This is where specific information about an employee's job is imparted. This tends to involve one to a small number of people helping the new employee. Socialization processes tend to be informal and can occur over a longer period of time, with a larger number of people helping the new employee. This is where new employees learn about their co-workers, establish norms, generate relationships, and build a social identity (Wanous, & Reichers, 2000). It is clear that new employees need a lot of information and training that is likely acquired in a number of different ways. Each of these processes require other people to help the new employee, during which time they are likely to feel grateful and feel the need to exhibit helping reciprocity.

Finally, who do new employees get help from? Based on the number of employees, the organisational structure, and the resources of an organisation, there is likely a number of different sources from which new employees initially get help. These sources could be: an external trainer, an HR member, a manager, a supervisor, an employee assigned to be the new employee's mentor, or a co-worker. It has been established that new employees need help and as mentioned an initial helping act often results in helping reciprocity. However there are also likely a number of other factors that influence the extent that helping reciprocity occurs.

1.7 Helping Reciprocity

Two important points have been established thus far; one, new employees need help, and two, that people tend to reciprocate when they are helped. There are a number of factors that may influence whether helping reciprocity occurs and if it does occur, to what extent. For the purposes of this investigation, helping reciprocity is defined as help given in response to an initial helping act. For example, employee A might help employee B to learn how to use the printer, employee B might feel grateful and reciprocate by helping employee A to set up a spreadsheet, this last act is known as helping reciprocity. The factors that may influence

helping reciprocity that will be discussed include: relationship strength, the norm of reciprocity, whether the initial help was voluntary or compulsory, and finally the perception of the obligation of the initial helper to help.

Firstly, relationship strength has been shown to affect the equivalence and immediacy of reciprocation in a series of investigations (Uhl-Bien & Maslyn, 2003; Sparrowe & Liden, 1997; Liden, Sparrowe, & Wayne, 1997). Immediacy is defined as the time between the exchange and the repayment (Uhl-Bien & Maslyn, 2003). Sparrow and Liden (1997) found that as relationship quality between a manager and subordinate increased, the time between the exchange and repayment also increased. This suggests that the relationship strength allowed for flexibility in the immediacy of reciprocity. Reciprocation equivalence is defined by the extent to which the exchange and repayment are equivalent in relative value (Uhl-Bien & Maslyn, 2003). Managers and subordinates engaged in a relationship of higher quality were found to be less likely to be concerned with ensuring their reciprocation was equivalent compared to those in a lower quality relationship (Liden et al., 1997; Sparrowe & Liden, 1997). Overall these studies show that relationship quality affects both the immediacy and equivalence of the reciprocity in working relationships by deeming it less necessary to reciprocate immediately and with equivalence to those who they are engaged in good quality relationships with. In addition, the same has been found in personal relationships where the equivalence and immediacy of reciprocation have been found to be of more importance for acquaintances than for friends, and more important for friends than for relatives (Rotkirch et al., 2014). Considering this research in the context of a new employee, given their status as a ‘new employee’ they are less likely to have strong relationships with many (if any) of those in their workplace and therefore may feel the need to reciprocate their help with immediacy and equivalency.

Secondly, the literature on the *norm of reciprocity* discusses that people reciprocate *in kind* or *in spite* to equal the original treatment and that it is simply the 'norm' to reciprocate (Berkowitz & Daniels, 1963; Gouldner, 1960; Thomas, 1957; Vaughan & Hogg, 2008). Gouldner (1960) suggests that the norm of reciprocity is part of a moral code; assisting the stability of social systems, whereby reciprocity maintains the social equilibrium. There are a number of colloquialisms that suggest a societal norm of reciprocity; "do unto others as you would have done unto you," "if you scratch my back, I'll scratch yours," "tit for tat" (Parisi, 2007), and "give and get" (Berkowitz & Daniels, 1963). Thus it could be the norm alone that is the driver behind helping reciprocity.

Thirdly, another factor in determining helping reciprocation and gratitude is whether the initial help was voluntary or compulsory and how this was interpreted by the recipient. Goranson and Berkowitz (1966) conducted a study where participants interacted with a confederate in one of three ways. They were either helped without instruction, helped with instruction, or not helped at all. They were later told that the confederate was their supervisor and the harder the participants worked on the task laid ahead of them, their supervisor had a higher chance of receiving a cash prize. The researchers found that the participants worked harder when the initial help they received was voluntary compared to when it was compulsory. The participants in the voluntary help condition, reported that their hard work (reciprocation) was an obligation given the voluntary nature of the initial help. Similar research by Weinstein, DeHaan, & Ryan (2010) and Tesser, Gatewood, and Driver (1968) discussed that a recipient's perception of a helper's motivation and intentions to help is likely to affect the gratitude the recipient feels. In one of Weinstein et al.'s (2010) studies, participants were helped by people who had either autonomous (self-motivated) or controlled (external) motivations. Participants felt more grateful towards those whose motivations were autonomous. Each of the studies found that genuine and self-motivated helping resulted in

more gratitude and helping reciprocity, than helping as a result of instruction or obligation. Therefore, in a high risk work environment this research would support discouraging voluntary help and encourage formally assigning helpers to new employees in order to avoid helping reciprocity and the risk that it carries.

Finally, it seems plausible given the research presented about voluntary and compulsory help, that an employee's perception of their helper's obligation to help (due to their job) might affect the gratitude and reciprocity intentions which they feel. For example, if a supervisor shows a new employee how to do something, this may be perceived as part of the supervisors' job, and while the new employee might be grateful, they may feel less compelled to reciprocate. On the other hand, if one of the new employee's co-workers show the new employee how to do something, and this is not formally required or an obligation of the co-worker, this may generate feelings of gratitude and be more likely to encourage helping reciprocity. This ties into the research presented in the previous paragraph that the generation of gratitude and helping reciprocity is increased when there is a perception that the helping act was a genuine self-motivated act and not a requirement of that person (Goranson & Berkowitz, 1966; Tesser et al., 1968; Weinstein et al., 2010). Thus it is here that the 'helping source' and hence the source's obligation to help is considered a key motivating factor that could affect the generation of gratitude and helping reciprocity in a new employee context.

It is important to note that there are a number of different ways that helping reciprocity might occur. A fictional example will help to illustrate this. John helped Mary to paint her house. Mary felt grateful for this and reciprocated the help by helping John to build a fence. These two acts of helping are relatively equal and as a result there is no further reciprocity required between Mary and John. There are, however, a number of different ways that Mary could reciprocate appreciation, each of which might be considered to 'chip away'

at the debt but are not necessarily a full act of reciprocity, like helping to build John's fence is. Mary might express her gratitude with a thanks, compliment John on his good work, or she might tell others how helpful John was, these are all verbal ways of partially reciprocating. Mary might show that she is trying to find a way to help John, which in some ways shows thanks but the help might not eventuate. Finally, Mary might engage in upstream reciprocity, this is helping another person or party that is different from who initially helped you (Chang, Lin, & Chen, 2012). Hence there are a number of different ways to reciprocate appreciation, whether it be a full and equal act, part act, or a thanks.

The research that has been presented shows the simple fact that receiving help invariably leads to feelings of gratitude and helping reciprocation. Consequently it is important to establish what makes helping reciprocity dangerous in a high risk workplace and hence why it should be discouraged.

1.8 What makes reciprocal helping bad in a high risk workplace?

It is evident that new employees need help of a number of different types when they first join an organisation. As the literature illustrates, being helped can result in the recipient feeling grateful for the help provided, often resulting in reciprocal helping behaviour (Bartlett & DeSteno, 1966; Goranson & Berkowitz, 1966). This section will discuss the different factors that contribute to new employee reciprocal helping being dangerous. Those that will be discussed include: the position of the industry on the continuum of safety risk, the ability of the new employee, and the type of reciprocation.

Firstly, it is important to establish which industries are more likely to carry risk for new employees engaging in helping reciprocity. It is clear that different industries carry varying amounts of risk. For example, working in retail with clothes and an eftpos machine, is not associated with as much risk as working in the logging industry amongst saws and

heavy machinery. Thus there is a continuum of risk associated with different jobs. Work Safe New Zealand (2015) consider the following industries and categories as those requiring more health and safety guidance: adventure activities, agriculture, construction and building, extractives, forestry, geothermal, hazardous substances, high hazards, manufacturing, petroleum, and major hazard facilities. These industries already carry risk, therefore the risk is increased when a new employee (who has shown to be a risk) is present.

Secondly, at the riskier end of the job safety continuum there are a number of factors that specifically make helping reciprocity a risk, one of which is the ability of the new employee to help. In the context of a new employee, their ability to actually provide help to a co-worker that is outside of their own job description and training, is likely to be low. As highlighted in Section 1.6, new employees can take anywhere from one day to eight weeks to formally receive work-related information. In addition Anderson et al. (1996) found that only 54% of their sample had completed work orientation processes in the first four weeks of employment. This puts new employees at more risk not only in the first four weeks of their employment but until they have an orientation, or have been taught work-related information by other employees. It is also likely to take longer to understand the risks involved with helping in different work spaces as this comes with time and experience. Hence new employees are not likely to have enough training and experience to safely engage in helping reciprocity.

Finally, at the risky end of the job safety continuum, any kind of reciprocation in a high risk work environment by a new employee can have risk. As mentioned, reciprocation can range from a simple verbal ‘thanks’, to a physical act of helping. While a thanks might seem like a mild form of reciprocation, it is important to consider that verbally thanking someone and physically helping them are both types of reciprocation that might take the employee out of their own work environment and into that of their co-workers. There are

three specific risks associated with this. Firstly, the employee has left their work space; this could pose a risk because they have left what they are doing and another employee could walk into a potentially risky situation. Secondly, the employee is entering another work space where they are less likely to know the risks in that space. A real life example of the danger of walking into someone else's workstation was seen when an employee entered a "danger zone during active tree felling operations and was struck by a falling tree…the employee was killed" (Occupational Safety and Health Administration, 2013). Thirdly, they may distract the other employee whilst in a critical stage of carrying out a task and as a result an accident could occur. The point here is that it might not just be a helping act that is risky, but also an attempt to say thanks. Thus the ability of the helper and any kind of reciprocation can have an impact on whether an accident occurs.

As has been described above and shown in previous research the key point is that helping reciprocity carries risk for new employees. A final example from Organ et al. (2005) illustrates the harmful nature that helping reciprocity can have in a high risk environment:

> Sam did, of course, earn Dennis's considerable gratitude, a token of which was demonstrated later in the evening when Dennis helped Sam, in the course of which Dennis toppled a 200-pound roll of paper onto his own foot and broke his toe (p.3).

Sam was a new employee who likely did not understand the risks involved with helping Dennis with tasks that he was not familiar with, this lead to an injury. It has been argued that helping in a high risk environment is a safety risk for employees themselves and their co-workers. When a safety risk or hazard is identified, it is a legal requirement for it to be removed or safeguarded against and the research presented shows that new employees tend to be a safety risk. There is little in the way of guidance for how organisations are supposed to

handle the risks associated with new employees (see Burt, 2015 for a recent work). Therefore this investigation aimed to explore this.

1.9 Present Study

The present investigation explored gratitude and helping reciprocation, with the aim of determining one of the reasons why new employees might be involved in more accidents. It has been made clear that new employees are a risk. When they are being taught about their new job and work environment they are likely to feel grateful for that help and generally grateful people tend to reciprocate help. Accordingly,

> *Hypothesis 1: Gratitude ratings will be positively related to helping reciprocity intentions.*

The help new employees receive in the first few months of their employment can come from a number of different sources. As highlighted earlier (section 1.7), the generation of gratitude and engagement in helping reciprocity can be based on the interpretation of the helper's intentions and their obligation to help (Bartlett & DeSteno, 2006; Goranson & Berkowitz, 1963; Tesser et al., 1968; Weinstein et al., 2010). To reiterate obligation to help is high when a helping act is part of a job or a formal role or is paid for, it is considered less likely to prompt gratitude and helping reciprocity compared to when the obligation to help is low and the help is a genuine act of helping, which is neither required by a role nor specifically paid for. Thus a new employee might feel more grateful towards a helpful co-worker, who is interpreted as engaging in a genuine act of helping because they have lower obligation than a supervisor, who is paid and hence has a high obligation to help the new employee. Hence varying the 'helping source' could be important in the generation of gratitude and helping reciprocity. Accordingly,

Hypothesis 2: As the helping source decreases in obligation to help, ratings of gratitude will increase.

Hypothesis 3: As the helping source decreases in obligation to help, helping reciprocity intentions will increase.

Specifically, the degree of rated gratitude and reciprocal helping intentions will increase through the following four helping source conditions that decrease in obligation to help: HR members or external trainers, supervisors, and mentors, all of whom are expected to help as part of their job (have high obligation to help) and finally co-workers whose help is considered extra-role with much less attached obligation.

It is considered that contextual variables such as tenure, and level of job risk and team interaction may affect the way that people feel about and respond to helping. Firstly, tenure is likely to affect the way that employees interact, particularly with their co-workers. For example, they might feel more positive emotions such as gratitude towards those they spend a lot of time with. In addition those with longer tenure might be less likely to reciprocate as they have immense experience and awareness of their work environment and might understand not to perform certain tasks with the risk of injuring themselves or others. Secondly, as touched on, the amount of job risk associated with a job is likely to affect how people act in that environment. For instance, people who work in a high risk environment versus a low risk environment are likely to act and react differently. Finally, in a job where team interaction is high, this is also likely to affect the way employees respond to others helping them. For instance, if someone worked in an isolated environment without team members they might respond differently to help, than someone who works with other people all the time. Given the fact that these variables can have immense impact on how people act, they will be assessed to determine whether they need to be controlled for in the analyses.

2 Experiment 1

2.1 Method

2.1.1 Design

Experiment 1 used a repeated measures design in order to control for individual differences. Therefore, each participant participated in each of the four conditions. The order that the conditions were presented was counterbalanced. Ethics approval was applied for, reviewed, and granted by the University of Canterbury Human Ethics Committee.

2.1.2 Participants

A wood products manufacturing company was approached and agreed for the author to come on their site and ask their employees if they would like to participate in the experiment (the letter of request is shown in Appendix A). There were two considerations when reflecting on the type of participants required. Firstly, given that this research examines the risks of helping behaviour in a high risk work environment, it was important that the participants had a significant level of safety risk associated with their job. Secondly, given that helping involves more than one person it was important that participants worked with at least one other person in their team and had some interaction with other employees. Twenty nine employees were given the opportunity to participate in the research. Twenty five employees accepted the invitation and participated, however, one was removed at the data analysis stage due to their very low level of job risk, yielding a final participation rate of 82 percent. This left a sample size of 24, who were all males with a mean age of 40.91 (*SD* = 12.00), and a mean company tenure of 70.29 months (*SD* = 119.06). According to G*Power 3, 24 participants in a repeated measures design is sufficient to detect an effect size of .25, with four conditions and an aim of a power of .95 (Faul, Erdfelder, Lang, & Buchner, 2007).

2.1.3 Experimental Materials

The experimental materials were split into two sections (see Appendix B). Section 1 involved the participant reading four identical scenarios where a man named Jeff helped the participant to learn about correct manual handling techniques. The method of using a scenario was chosen as it was not putting participants at risk as a real life scenario might. The scenario was designed using information from the Code of Practice for Manual Handling (Department of Labour, 2001). The scenario was as follows:

> Your job involves manual handling. Manual handling is defined as any activity requiring a person to lift, lower, push, pull, carry, move, hold, or restrain an object. One of your co-workers named Jeff helped you learn correct manual handling techniques. Jeff covered the following: how to complete manual handling tasks properly and safely, the hazards associated with the manual handling, how to deal with or minimise the manual handling hazards, how to use equipment such as lifting aids properly and safely, how to carry out a basic assessment of the task in order to recognise hazardous manual handling, the principles of safe handling (such as being close to the load).

In each scenario Jeff was presented in four different roles, which formed the conditions. The roles were: an *official trainer from Ergonomics NZ,* a *supervisor*, a *co-worker officially assigned as the employees mentor*, and as above, a *co-worker*. After reading the scenario the participant was asked to indicate their agreement or disagreement with items measuring gratitude, helping reciprocity, and indebtedness, based on their interaction with Jeff, by circling a number on a seven point scale from 1 = strongly disagree to 7 = strongly agree. There was one item measuring feelings of gratitude: *feel gratitude towards Jeff,* six items measuring helping reciprocity intentions*: compliment Jeff on his helpfulness* (verbal), *tell others how helpful Jeff was* (verbal), *express your gratitude to Jeff* (verbal), *would help*

Jeff if you had a chance to (physical act of helping), *try to find a way to help Jeff* (attempt), and *be motivated to help other co-workers* (upstream reciprocity), and one item measuring indebtedness: *feel indebted to Jeff.* The eight items were designed based on the possible feelings associated with each construct and based on the examples posed in the Mary and John example in Section 1.9. As highlighted in Section 1.5 gratitude is more likely present than indebtedness, however, it was included as one of the items to ensure that all potentially relevant feelings were measured. The key items for assessing the hypotheses were *feel gratitude towards Jeff* and *would help Jeff if you had a chance to*, these two items tie into the narrative of a new employee being helped, feeling grateful, and then equally helping them back (helping reciprocity). The other items provide information about the lesser forms of reciprocity and indebtedness.

Section 2 of the experimental materials involved the participant answering questions about their age, gender, company tenure, the number of co-workers they have, and whether their job involved manual handling. This was followed by a measure of perceived job risk using Hayes, Perander, Smecko, and Traskls (1998) 10-item Work Safety Scale. Example items included asking whether their job was *hazardous* and *risky*. The participant rated each item on a five point scale from 1 = strongly disagree to 5 = strongly agree. Reverse coded items were recalculated and the overall score was determined by calculating the mean responses over each of the 10 items. A higher score indicated a higher level of perceived job risk. This scale produced a coefficient alpha of .81.

Five items from the Team Member Interaction scale developed by Pearce and Gregersen (1991) were adapted to measure co-worker interaction. These were adapted because the original items included interaction with ‘others’, hence this was changed to ‘team/co-workers’. Appendix C shows how these items were changed. An example item was “*I work closely with my team/co-workers in doing my work”*. The participant rated each item

on five point scale from 1 = strongly disagree to 5 = strongly agree. The overall score was determined by calculating the mean response over each of the five items. A higher score indicated a higher level of team interaction. This scale produced a coefficient alpha of .81.

During the development stage of the scenarios and questions for this investigation, piloting was carried out to determine whether the materials were easy to understand and respond to. Changes were made in order to ensure understanding, before engaging in the experiment.

2.1.4 Procedure

The participants were escorted from their work spaces by their supervisor or manager in groups of one to seven and taken to a training room. The author gave the participants the information sheet and consent form to read (see Appendix D). Those who wished to participate were given an envelope with the experimental materials enclosed to complete. Participants were told that once completed, the materials were to be returned into the envelope, sealed, and put in the designated box. This was done in order to maintain anonymity. Participants were given a $10 petrol voucher in exchange for their time and signed receipt of it. Participants were also given a debrief sheet in order to explain the aim of the experiment (see Appendix E).

2.2 Results

In the data set there were 11 missing responses over the four helping conditions and one missing response in the job risk scale, each of these were replaced with the relevant within condition sample mean for that variable. Participants had a mean number of 6 co-workers (SD = 4.24), and a satisfactory Team Member Interaction score (M = 4.04, SD = .82) and satisfactory level of job risk, established with the Work Safety Scale score (M = 3.13, SD = .66).

In order to examine hypothesis 1, Pearson product moment correlations were calculated between the mean responses for the item *feel gratitude towards Jeff* (ratings of gratitude), and the responses for the item *would help Jeff if you had the chance to* (helping reciprocity intentions). Ratings of gratitude were also correlated with the other helping reciprocity and indebtedness item responses, these correlations are shown in Table 1. The correlations were calculated firstly by calculating the mean response across each of the four conditions, for each item, thus finding each participants' average response to each item, then calculating the correlations between the item measuring gratitude and all other items.

Table 1 shows a significant correlation between mean ratings of gratitude and helping reciprocity intentions, this result supports hypothesis 1. There were also other significant results suggesting that the more gratitude participants reported, the more they intended to express gratitude and upstream reciprocity intentions.

Table 1

Pearson product moment correlations between the mean responses for the item 'feel gratitude towards Jeff' with each of the mean responses of the helping reciprocity and indebtedness items.

Average item ratings	Average rating of 'feel gratitude towards Jeff' across the 4 conditions N= 24
Would help Jeff if you had a chance to	.41*
Express gratitude	.59**
Compliment Jeff	.36
Tell others how helpful Jeff was	.29
Try to find a way to help Jeff	.09
Be motivated to help other co-workers (upstream reciprocity)	.47*
Feel indebted	.35

*$p < 0.05$ level, two-tailed. **$p < 0.01$ level, two-tailed.

In order to assess the points raised in Section 1.9, that job risk, team interaction, and tenure may have an effect on the way the participants reacted to being helped by the four different sources, Pearson product moment correlations were calculated between each of the gratitude, helping reciprocity, and indebtedness items and the three covariates (job risk, team interaction, and tenure) for each of the four experimental conditions. The correlations are shown in Table 2. Where significant correlations were found between any gratitude, helping reciprocity, and indebtedness item and any of the job risk, team interaction, and tenure variables, the variable was considered to be a covariate, and was considered to have an effect

on how the participants responded and hence was included in the subsequent ANCOVA analyses in Table 3.

Table 2 shows significant correlations between the item *feel gratitude towards Jeff* and both team interaction and tenure, between job risk for both items *feel indebted to Jeff* and *would help Jeff if you had a chance to,* between the item *compliment Jeff on his helpfulness* and team interaction, and finally between the item *tell others how helpful Jeff was* and tenure.

It is also noted that in Table 2 there were significant negative correlations between the job risk scale score and the item *would help Jeff if you had the chance to*. This suggests that participants understood that as job risk increased they should engage in less helping.

Table 2

Pearson product moment correlations between each of the gratitude, helping reciprocity, and indebtedness items and the variables job risk, team interaction, and tenure, across the helping source conditions.

		Experimental Condition: Helping Source			
Variable	Item	External Trainer	Supervisor	Mentor	Co-worker
Job Risk	Feel gratitude towards Jeff	.18	-.07	-.27	.13
	Express your gratitude to Jeff	.22	-.02	.14	.16
	Feel indebted to Jeff	.35	.45*	.41*	.46*
	Be motivated to help other co-workers	.04	-.03	-.13	-.13
	Compliment Jeff on his helpfulness	-.01	-.07	.00	.00
	Tell others how helpful Jeff was	.14	-.11	-.11	-.01
	Would help Jeff if you had a chance to	.10	-.34	-.44*	-.47*
	Try to find a way to help Jeff	.24	-.18	-.03	.03

Table 2 continued

Variable	Item	Experimental Condition: Helping Source			
		External Trainer	Supervisor	Mentor	Co-worker
Team Interaction	Feel gratitude towards Jeff	.25	-.23	-.10	.51**
	Express your gratitude to Jeff	.37	-.11	-.08	.39
	Feel indebted to Jeff	.35	.11	-.18	.11
	Be motivated to help other co-workers	-.01	.02	.05	-.15
	Compliment Jeff on his helpfulness	.09	.23	.04	.57**
	Tell others how helpful Jeff was	-.06	-.06	-.25	-.21
	Would help Jeff if you had a chance to	.22	-.09	.07	.12
	Try to find a way to help Jeff	.08	-.04	.25	.17
Tenure	Feel gratitude towards Jeff	-.10	-.05	-.08	-.60**
	Express your gratitude to Jeff	-.04	.12	.29	-.27
	Feel indebted to Jeff	-.33	-.04	.08	-.38
	Be motivated to help other co-workers	.21	-.15	.06	-.24
	Compliment Jeff on his helpfulness	-.03	.01	.11	-.21
	Tell others how helpful Jeff was	.12	.16	.51*	.14
	Would help Jeff if you had a chance to	-.02	.09	.23	-.09
	Try to find a way to help Jeff	-.04	-.01	-.07	-.06

*$p < 0.05$ level, two-tailed. **$p < 0.01$ level, two-tailed.

Table 3 shows the means and standard deviations for the responses on the gratitude, indebtedness, and helping reciprocity items across the four helping source conditions. The means shown for the items that went through the ANCOVA analyses (these are the items that have a covariate in the last column) are the covariate adjusted means. Generally the mean

responses for each of the items increased as the obligation of the helping source to help decreased. In particular looking at the external trainer versus the co-worker, each gratitude and helping reciprocity mean response was higher for the co-worker helping source.

In order to examine hypotheses 2 and 3, repeated-measures ANOVA's and ANCOVA's were carried out, the results from these are shown in Table 3. These were conducted to assess if mean differences existed for ratings of gratitude and helping reciprocity intentions across the different helping sources. The significantly correlated covariates from Table 2 that were included in the ANCOVA's are shown in the last column of Table 3 for each item. For each analysis the assumption of sphericity was checked. The assumption of sphericity was violated in the gratitude item analysis, thus the Huynd-Feldt correction was applied as the estimated epsilon was greater than 0.75 (Fields, 2009).

There were no significant mean differences between the experimental conditions for ratings of gratitude, therefore no support for hypothesis 2. However there was a general increase in mean ratings of gratitude as the obligation of the helping source to help decreased. For instance, looking at the mean response for the co-worker (low obligation) compared to the external trainer (high obligation) the mean response increases from 4.70 to 5.17, thus the increase was in the hypothesised direction.

In contrast, there was a significant mean difference between the conditions for helping reciprocity intentions, therefore support for hypothesis 3. Hypothesis 3 was specifically looking for differences in responses to the different helpers given their differing obligations to help, thus LSD pairwise comparisons were carried out to assess where the differences lay. The analysis showed that participants rated their helping reciprocity intentions higher for the co-worker than the external trainer (p=.029).

Table 3

Adjusted descriptive statistics for each item across the four conditions and repeated measures ANOVA's and ANCOVA's with the relevant covariates.

Item	Experimental Condition: Helping Source				ANOVA/ANCOVA Comparison	Mauchly's Test of Sphericity	Significant Covariates for the ANCOVA's
	External Trainer Mean (SD)	Supervisor Mean (SD)	Mentor Mean (SD)	Co-Worker Mean (SD)			
Feel gratitude towards Jeff	4.70 (1.60)	5.04 (1.19)	5.37 (1.05)	5.17 (1.27)	$F(2.48,63) = 2.53$, $p = .077$[a]	$\chi^2(5) = 16.47$, $p = .006$	Team interaction and tenure
Express your gratitude to Jeff	5.04 (1.42)	5.00 (1.31)	5.37 (1.13)	5.25 (1.35)	$F(3,69) = .50$, $p = .677$	$\chi^2(5) = 2.37$, $p = .795$	
Feel indebted to Jeff	3.87 (1.54)	3.70 (1.48)	3.61 (1.81)	3.69 (1.36)	$F(3,66) = .21$, $p = .885$	$\chi^2(5) = 8.60$, $p = .126$	Job risk
Be motivated to help other co-workers	5.50 (1.35)	6.08 (.92)	5.99 (1.14)	5.95 (.99)	$F(3,69) = 1.63$, $p = .086$	$\chi^2(5) = 10.75$, $p = .057$	
Compliment Jeff on his helpfulness	5.34 (1.40)	5.50 (1.10)	5.66 (1.23)	5.82 (1.08)	$F(3,66) = 1.60$, $p = .1.97$	$\chi^2(5) = 8.03$, $p = .155$	Team interaction
Tell others how helpful Jeff was	5.41 (1.38)	5.37 (1.01)	5.70 (1.19)	5.65 (.86)	$F(3,66) = .46$, $p = .707$	$\chi^2(5) = 10.69$, $p = .058$	Tenure
Would help Jeff if you had a chance to	5.62 (1.34)	5.87 (1.26)	5.91 (1.24)	6.21 (.88)	$F(3,66) = 2.88$, $p = .042$	$\chi^2(5) = 9.62$, $p = .087$	Job risk
Try to find a way to help Jeff	5.33 (1.40)	5.41 (1.10)	5.63 (1.04)	5.43 (1.20)	$F(3,60) = .742$, $p = .751$	$\chi^2(5) = 3.59$, $p = .610$	

[a]Huynd-Feldt correction applied

2.3 Summary

The results of Experiment 1 found support for hypotheses 1 and 3, but not for hypothesis 2. It was then decided to replicate the experiment in an attempt to find support for hypothesis 2 and again test hypotheses 1 and 3. The scenarios for Experiment 2 were modified. Two changes were made, firstly, a more general description of initial helping was developed where employees were helped to settle into their new job. Secondly, one of the help providers was changed from an External Trainer to a HR member, given that an HR member is more likely to be a helper than an external trainer if organisations have limited resources. The replication of the experiment is considered to increase the generalisability of the results.

3 Experiment 2

3.1 Method

3.1.1 Design

Experiment 2 used a repeated measures design. Each participant participated in each of the four conditions. The order the conditions were presented was counterbalanced.

3.1.2 Participants

A second wood products manufacturing company was approached and agreed for the author to come on their site and ask their employees if they would like to participate (the letter of request is shown in Appendix A). As with the first experiment, there were two considerations when reflecting on the type of participants required for the investigation, firstly, that participants had some safety risk in their job and secondly, that participants worked with at least one other person in their team to ensure they had some interaction with others. Forty employees at the company were given the opportunity to participate in the research, all forty agreed, however three failed to complete all of the experimental conditions and were removed. Thus 37 employees (36 were male) participated in Experiment 2, giving a

participation rate of 92 percent. Participants had a mean age of 39.86 (*SD* = 11.16) and mean company tenure of 105.35 months (*SD* = 83.93). According to G*Power 3, 24 participants in a repeated measures experiment is sufficient to detect an effect size of .25, with four conditions, and aiming for a power of .95 (Faul et al., 2007).

3.1.3 Experimental Materials

The experimental materials were split into two sections (see Appendix F). Section 1 involved the participants reading 4 scenarios where an unnamed person (in a different role in each scenario) helped them to learn about their job in the first three months of employment. The scenario was as follows:

> Imagine that during your initial employment period, specifically the first 3 months on the job. A member of the Human Resources induction team: helped you understand how to solve work related problems, helped you settle in and become familiarised with the job, and made sure you had important information.

In each scenario the helper was in one of the following roles: *HR induction team member* (as above in scenario), *a supervisor*, *a co-worker officially assigned to be the employees mentor*, and *a co-worker*. Following each scenario participants were asked to indicate their agreement or disagreement with how likely they would be to experience the same gratitude, helping reciprocity, and indebtedness items as used in Experiment 1. The items were only different from Experiment 1 in that the name 'Jeff' was removed. The key items for assessing the hypotheses were *feel gratitude* and *would help them if you had a chance to*, as in Experiment 1 these two items tie into the narrative of a new employee being helped, feeling grateful and then equally helping back (helping reciprocity).

Section 2 of the experimental materials was identical to that used in Experiment 1 and the scales were scored as described in Experiment 1.

3.1.4 Procedure

The procedure was the same as that used in Experiment 1.

3.2 Results

In the data set there was nine missing scenario responses over the four conditions, nine missing responses in the job risk scale, and five missing responses in the team interaction scale, each of these were replaced with the relevant within condition sample mean for that variable. The participants worked with a satisfactory mean number of 16 co-workers (SD =19.50), had a sufficient team interaction score (M = 3.92, SD = .71), and had sufficient job risk, established with the Work Safety Scale score (M = 3.13, SD = .57).

In order to examine hypothesis 1, Pearson product moment correlations were calculated between the mean responses for the item *feel gratitude towards them* (ratings of gratitude) and the mean responses for the item *would help them if you had the chance to* (helping reciprocity intentions). Mean ratings of gratitude were also correlated with the other helping reciprocity and indebtedness item responses, these correlations are shown in Table 4. The correlations were calculated firstly by calculating the mean response across each of the four conditions, for each item, thus finding each participant's average response to each item, then calculating the correlations between the ratings of gratitude and all other items.

Table 4 shows a significant correlation between the ratings of gratitude and helping reciprocity intentions, this result supports hypothesis 1. There were also significant correlations between ratings of gratitude and all other items suggesting that the more gratitude participants reported, the more reciprocity intentions and indebtedness participants felt.

Table 4

Pearson product moment correlations between the mean responses for the item 'feel gratitude' with each of the mean responses of the helping reciprocity and indebtedness items.

Average item ratings	Average rating of 'feel gratitude' across the 4 conditions N= 37
Would help them if you had a chance to	.77**
Express your gratitude	.88**
Compliment them on their helpfulness	.75**
Tell others how helpful they were	.76**
Try to find a way to help them	.62**
Be motivated to help other co-workers	.74**
Feel indebted	.50**

*$p < 0.05$ level, two-tailed. **$p < 0.01$ level, two-tailed.

In order to assess the points raised in Section 1.9 that the variables job risk, team interaction, and tenure might affect the way the participant's responded to being helped, Pearson product moment correlations were calculated between these variables and each gratitude, helping reciprocity, and indebtedness item, within each of the four experimental conditions. These are shown in Table 5. Where significant correlations were found between a response item and a variable, the variable was used as a covariate in the subsequent ANCOVA analyses in Table 6.

Table 5 shows significant correlations between the variable job risk with the items *feel gratitude* and *would help them if you had the chance to* and between team interaction

with items *feel indebted, be motivated to help other co-workers, tell others how helpful they were, and try to find a way to help them.*

It is also important to note that like Experiment 1, there were significant negative correlations between job risk scores and helping reciprocity intentions shown in Table 5. This suggests that participants understood that as job risk increased they should engage in less helping.

Table 5

Pearson product moment correlations between each of the gratitude, helping reciprocity, and indebtedness items and the variables job risk, team interaction, and tenure, across the helping source conditions.

		Experimental Condition: Helping Source			
Variable	Item	HR Member	Supervisor	Mentor	Co-worker
Job Risk	Feel gratitude	-.15	-.20	-.43**	-.16
	Express your gratitude	-.15	-.13	-.29	-.17
	Feel indebted	-.18	-.05	-.15	.09
	Be motivated to help other co-workers	.11	.14	-.29	-.17
	Compliment them on their helpfulness	-.17	-.21	-.24	-.32
	Tell others how helpful they were	.15	-.05	-.30	-.21
	Would help them if you had a chance to	.10	-.12	-.32*	-.34*
	Try to find a way to help them	.04	-.11	-.07	-.24

Table 5 continued

Variable	Item	Experimental Condition: Helping Source			
		HR Member	Supervisor	Mentor	Co-worker
Team Interaction	Feel gratitude	.11	.02	-.06	.04
	Express your gratitude	.17	.03	.07	.15
	Feel indebted	.10	.27	.14	.35*
	Be motivated to help other co-workers	.47**	.26	.10	.16
	Compliment them on their helpfulness	.18	.13	.12	.00
	Tell others how helpful they were	-.43**	.13	.12	.06
	Would help them if you had a chance to	.31	.07	-.00	-.04
	Try to find a way to help them	.43**	.10	.18	.04
Tenure	Feel gratitude	.03	-.14	-.21	-.15
	Express your gratitude	-.00	-.03	-.18	-.13
	Feel indebted	-.02	-.13	-.03	.14
	Be motivated to help other co-workers	-.09	-.06	-.18	-.15
	Compliment them on their helpfulness	.04	.00	-.13	-.18
	Tell others how helpful they were	.16	-.12	-.24	-.17
	Would help them if you had a chance to	.00	-.05	-.25	-.28
	Try to find a way to help them	.22	.07	-.18	-.21

*$p < 0.05$ level, two-tailed. **$p < 0.01$ level, two-tailed.

Table 6 shows the means and standard deviations for the responses to the gratitude, indebtedness, and helping items across the four conditions. The means shown for the items that went through the ANCOVA analyses (these are the items that have a covariate in the last

column) are the covariate adjusted means. Generally the means increased as the obligation of the helping source to help decreased. In particular looking at the HR member versus the co-worker, each response was higher for the co-worker for each item except for *tell others how helpful they were*.

In order to examine hypotheses 2 and 3, repeated-measures ANOVA's and ANCOVA's were carried out, these are shown in Table 6. These were conducted to assess if mean differences existed for ratings of gratitude and helping reciprocity intentions across the different helping sources. The significantly correlated covariates from Table 5 that were included in the ANCOVA's are shown in the last column of Table 6. For each analysis the assumption of sphericity was checked. Sphericity was violated in three of the items, a Greenhouse-Geisser or Huynd-Feldt correction was applied given the estimated epsilons (Fields, 2009).

There were no significant mean differences between the conditions for *feel gratitude*, therefore there was no support for hypothesis 2. However there was a general increase in mean ratings of gratitude as the obligation of the helping source to help decreased. For instance, looking at the mean response for the co-worker (low obligation) compared to the HR member (high obligation) the mean response increases from 5.27 to 5.91, thus the increase was in the hypothesised direction.

In contrast, there was a significant mean difference between the conditions for helping reciprocity intentions, therefore showing support for hypothesis 3. Hypothesis 3 was specifically looking for differences in responses to the different helping sources, thus LSD pairwise comparisons were carried out to assess where the difference lay. Participants had higher helping reciprocity intentions for the co-worker than the supervisor (p=.034).

Table 6

Adjusted descriptive statistics for each item across the four conditions and repeated measures ANOVA's and ANCOVA's with the relevant covariates.

Item	Experimental Condition: Helping Source				ANOVA/ANCOVA Comparison	Mauchly's Test of Sphericity	Significant Covariates for the ANCOVA's
	HR Member Mean (SD)	Supervisor Mean (SD)	Mentor Mean (SD)	Co-Worker Mean (SD)			
Feel gratitude	5.27 (1.52)	5.30 (1.74)	5.44 (1.70)	5.91 (1.25)	$F(3,105) = 2.00$, $p = .118$	$\chi2(5) = 8.61$, $p = .125$	Job risk
Express your gratitude	5.25 (1.16)	5.18 (1.59)	5.21 (1.61)	5.70 (1.33)	$F(3,108) = 2.24$, $p = .088$	$\chi2(5) = 2.21$, $p = .819$	
Feel indebted	4.0 (1.60)	4.25 (1.75)	4.50 (1.69)	4.52 (1.62)	$F(3,102) = 1.15$, $p = .331$	$\chi2(5) = 2.70$, $p = .745$	Team interaction
Be motivated to help other co-workers	5.47 (1.30)	5.47 (1.36)	5.58 (1.53)	5.83 (1.29)	$F(3,102) = 2.12$, $p = .101$	$\chi2(5) = 8.60$, $p = .126$	Team interaction
Compliment them on their helpfulness	5.54 (1.21)	5.45 (1.64)	5.43 (1.62)	5.80 (1.39)	$F(3,108) = 1.08$, $p = .358$	$\chi2(5) = 4.57$, $p = .471$	
Tell others how helpful they were	5.69 (1.13)	5.16 (1.71)	5.45 (1.59)	5.41 (1.40)	$F(2.71,102) = .87$, $p = .459$[a]	$\chi2(5) = 15.67$, $p = .008$	Team interaction
Would help them if you had a chance to	5.70 (1.22)	5.55 (1.46)	5.81 (1.39)	5.89 (1.46)	$F(1.89,105) = 5.33$, $p = .032$[b]	$\chi2(5) = 28.90$, $p = .000$	Job risk
Try to find a way to help them	5.52 (1.30)	5.38 (1.59)	5.47 (1.57)	5.63 (1.38)	$F(1.95,102) = 1.68$, $p = .176$[b]	$\chi2(5) = 27.37$, $p = .000$	Team interaction

[a]Huynd-Feldt correction applied
[b]Greenhouse-Geisser correction applied

4 Discussion

4.1 General Discussion

The aim of this study was to investigate one of the potential reasons why new employees are involved in more accidents than employees of longer tenure. Support was found for hypotheses 1 and 3, however not for hypothesis 2. The first hypothesis was that gratitude ratings would be positively related to helping reciprocity intentions. In both Experiment 1 and 2 there were significant positive correlations between responses to the items measuring gratitude and helping reciprocity intentions thus supporting hypothesis 1. Therefore, as expected, employees who receive help feel grateful and have intentions to reciprocate through helping. The second hypothesis predicted that ratings of gratitude would be manipulated by the source of help, specifically that gratitude would increase as the obligation of the helper to help decreased across HR members/external trainers, supervisors, mentors, and co-workers. Neither experiment found that ratings of gratitude changed significantly in response to the different helping sources, hence there was no support for hypothesis 2. The third hypothesis predicted that helping reciprocity intentions would be manipulated by the source of help, specifically that helping reciprocity intentions would increase as the obligation of the helper to help decreased across HR members/external trainers, supervisors, mentors, and co-workers. Helping reciprocity intentions varied significantly in response to the different helping sources. Therefore there was support for hypothesis 3.

The results of the investigation were both supportive and unsupportive of the hypotheses and research presented in Section 1. The key points to be discussed include: the positive relationship between gratitude and helping reciprocity, the finding of gratitude generation not being a function of helping source, helping reciprocity intentions varying by

helping source, the norm of reciprocity, and the effects of job risk and the norm of reciprocity.

As expected gratitude and helping reciprocity intentions were found to be positively correlated in both experiments, supporting hypothesis 1. This supports research by authors presented in Section 1 (for example, Bartlett & DeSteno, 2006; Goranson & Berkowitz, 1966; Tesser et al., 1968; Weinstein et al., 2010).

The results of this investigation suggest that the participants felt the same amount of gratitude regardless of the source of help. Hence the results did not support the research by Weinstein et al., (2010) that hypothesis 2 was based on. To reiterate they examined recipients who received help from people who had either controlled (external) or autonomous (self-motivated) motivations. These labels can be mapped over to those used in the present investigation; with the co-worker condition being considered *autonomous* and the external trainer, HR member, supervisor, and mentor to be varying levels of *controlled* given that their jobs carry different levels of training and helping obligation and responsibility. Weinstein et al., (2010) found differences in ratings of gratitude between the autonomous and controlled conditions. However, the present investigation did not find any significant differences across the conditions. Nevertheless it was noted that when comparing mean responses to gratitude from condition 1 (the external trainer or HR member, high obligation) to condition 4 (co-worker, low obligation) in both Experiment 1 and 2 the means did increase. Thus the mean results were in the hypothesised direction, but not significant.

It was found that helping reciprocation intentions were manipulated by the source of help. In Experiment 1, using pairwise comparisons it was noted that there was a significant difference for helping reciprocity intentions between responses for the external trainer and the co-worker. This showed that participants had higher helping intentions for the co-worker than the external trainer. In Experiment 2, using pairwise comparisons it was noted that there was

a significant difference for helping reciprocity intentions between responses for the supervisor and co-worker. This showed that participants had higher helping intentions for the co-worker than the supervisor. It is thought that this could be based on that mentioned in Section 1.7, where the helping recipient (participant) perceived that the external trainer in Experiment 1 and the supervisor in Experiment 2 had a high obligation to help, yet the co-worker was doing so as a genuine act of helping, hence the latter was more deserving of repayment in the form of helping reciprocity. Given this, the results of this investigation are consistent with that carried out by Goranson and Berkowitz (1966) who examined voluntary versus compulsory motivators for initial help. The conditions in the present experiments can be interpreted with Goranson and Berkowitz's (1966) labels, with the co-worker condition being considered *voluntary* and the external trainer, HR member, supervisor, and mentor conditions to be varying levels of *compulsor*y given that their jobs carry different levels of training and helping obligation and responsibility. Both investigations found that recipients reciprocated or intended to reciprocate more towards the voluntary helper than those helping due to controlled motivations. It is important to consider that in situ, actual helping reciprocity carried out might be seen to be even less for external trainers and HR members as a function of opportunity, where new employees may have less opportunity to return their help as they would to their co-workers who they would be around more often.

In addition the results of the research support the theory of a norm of reciprocity playing a role in determining reciprocity behaviour. Participants felt similarly grateful to each of the helping sources, however, rated their helping reciprocity intentions significantly higher for the co-worker than for the other helping sources. Hence the norm of reciprocity, perhaps enhanced by group interdependence with their co-workers could be the cause (Thomas, 1957). This could be because participants were more likely to associate interdependence with their co-workers than with their supervisors and trainers of whom they are less likely to have

group goals with. Hence the feeling of being part of the co-worker team may have caused greater helping reciprocity intentions within the framework of the norm of reciprocity. On the other hand they may have felt less interdependence with those in the other roles (external trainer/HR member, supervisor and mentor) who are likely higher in the organisational structure and feel as though it is part of their job to help the employee, therefore they may feel less helping reciprocity intentions towards them.

Whilst job risk was found to have an effect on minimising helping reciprocity intentions, it was not enough to stop it entirely given the drive to reciprocate. It was noted in Tables 2 and 5 that there were significant negative correlations between job risk and helping reciprocity intentions. This suggested that participants understood that as job risk increases helping reciprocity should decrease. However, when job risk was controlled for, by including it as a covariate in the ANCOVA's for helping reciprocity intentions, the participants still rated that they would engage in helping reciprocity. There are therefore at least two influences behind their responses. Firstly, the risk associated with helping, and secondly, the importance of reciprocating when helped. It appears that the drive to reciprocate triumphed, particularly when it came to reciprocating to their co-workers.

4.2 Implications

While the effects found in the present investigation might have been small, safety is about minimising the 'holes in the cheese' as Reason (2000) would say, in order to decrease the possibility of accidents happening. This investigation has provided valuable information about the way that people feel and think when they are helped. It allows practical suggestions to be made in order to minimise workplace accidents and has created a base for researchers to build on to discover further reasons why new employees are involved in more accidents.

In this instance clear conclusions can be drawn from the research and hence clear instructions can be developed. It is obvious that helping reciprocity needs to be discouraged.

Section 1 built a strong argument that new employees are at risk of being in more accidents than their longer tenure counterparts, particularly in high risk work environments. When they are helped, the present research shows that they intend to engage in helping reciprocity, in particular with their co-workers. Engaging in helping reciprocity could be the causal mechanism which results in a new employee having an accident.

When a new employee joins an organisation there is no doubt that they will need help. There are three steps that are suggested to minimise helping reciprocity in this instance, these are: formalised help given to all employees, discouraging helping reciprocity, and developing a safety conscious helping culture (Burt, 2015). The first step suggests that the helping source should be formalised. For instance, it is evident from this investigation that help from co-workers generates more helping reciprocity than help from formal sources such as external trainers, HR members, supervisors, and mentors. Hence the results of this research suggest assigning a person in one of these roles to help new employees to learn new information, adapt, and familiarize. However, this step alone is not enough, there are likely to be times when formally assigned helpers will not be available and at these times it is possible that co-workers might step in and help a new employee if they need help. Therefore step 2 would be to discuss the dangers of helping reciprocity with new employees and explaining that while helping reciprocity might be considered prosocial behaviour, it does carry risks for their own safety and that of those around them, hence they should not engage in it within the risky environment of their workplace. It would be particularly helpful if this was part of the organisational policy and hence became part of the working culture.

The third and final step was highlighted by Burt (2015), that it is important to have a safety conscious helping culture that involves a “think before you help process”. Therefore new employees should be encouraged to stop and think about their actions and assess whether they have the knowledge and skills to carry out tasks safely, and if they do not, then they

should not engage. This applies to tasks prompted or engaged in due to helping reciprocity intentions. The present investigation supports each of these steps. If these steps are not carried out it is likely that helping reciprocity will continue to occur and new employees will be putting themselves and others at risk. Ultimately, it is legally essential that these steps are carried out as new-employee helping is a risk factor which is known and therefore needs to be protected against.

4.3 Strengths and Limitations

The design of the experiments had a number of benefits, and was perhaps the best design given the focus on safety. Ideally an investigation like this should be carried out in real life, using observations of how people act in response to workplace variability (being helped by people in different roles). However, in this instance it would have been unethical to do so given that this research concentrates on safety, and this would have put participants at risk of harm. In addition, it would be difficult to follow an employee around trying to figure out whether the helping acts they carried out were in fact helping reciprocity and which initial helping act they were in response to. Hence it is more appropriate to ask them how they think they would act in different helping scenarios. Therefore the repeated measures design was best given that each participant took part in each condition. This design controlled for between-condition individual difference variance, for issues such as IQ, age, ability, social desirability, and so on, because any effects from these would have been distributed across conditions (Fields, 2009; Goodwin, 2008). Critics of repeated measures design suggest that order effects are often a problem, however, this was addressed using counterbalancing of the conditions. Hence overall the design of this investigation was optimal given the aims and context.

Determining which covariates affected the way the participants responded was also a benefit of the design of the experiments. The covariates that had significant relationships with

the items in Experiment 1, did not exactly map over to Experiment 2. For instance, looking at the items measuring gratitude in both experiments, they had significant relationships with team interaction and tenure in Experiment 1 and only job risk in Experiment 2. This shows that different environments, even in the same industry, can have an effect on the way people act. Hence it was important to establish the variables that may cause variance in the dependent variables. This was an advantage of the way this research was carried out.

It is important to mention that there are also limitations with the present research. In particular the generalizability of the results and the lack of females in the investigation. Firstly, all participants came from two companies within one industry and therefore the generalizability of the results outside of the wood products manufacturing industry and these companies alone may be limited. However, the results give enough support to encourage replicating the experiments in a wider number of high risk industries. Secondly, it is important to note that other than one female in Experiment 2, all participants were male. This may have had an impact on the overall results, especially considering that it has previously been found that females rate gratitude and reciprocity as more important than their male counterparts (Rotkirch et al., 2014). With this in mind the results may be underestimating the dangers associated with helping in a workforce that includes more females. Given the industry sampled it is not surprising that there were mostly males, however, if the experiments were to be repeated, it is recommended that they be carried out in a high risk industry where there is a higher representation of women. Should these limitations be addressed in future investigations, the results should be more valid and generalisable.

4.4 Future Research

Along with the points highlighted in the previous section, there are other changes that could be made should this research be replicated. Specifically, assessing other factors that might affect helping reciprocity intentions. Whilst the literature and present investigation has

shown that gratitude and helping behaviours are positively correlated and that helping reciprocity can be manipulated by helping source, it is important to consider that other variables may have a contributing impact. The OCB literature shows that there are a number of factors that influence the way that people behave at work. For example, job satisfaction and organisational commitment (Williams & Anderson, 1991), leader supportiveness (Organ & Ryan, 1995), leader-member exchange (Deluga, 1994) and personal factors (Kanagaretnam, Mestelman, Nainar, & Shehata, 2009). The repeated measures design of the present research would have controlled for variance due to these factors, however, it would be interesting to see if they affect helping behaviour in a high risk work environment. Therefore in future studies it is recommended that more constructs are measured in order to fully understand why helping behaviours occur. For example, does having good quality leader-member exchange decrease the likelihood of engaging in risky helping reciprocity? This type of research would help broaden our understanding of why people are involved in accidents at work.

4.5 Conclusion

The results of this investigation provide valuable information for companies in high risk industries. Across the two experiments it was found that ratings of gratitude and helping reciprocity intentions were positively related and that helping reciprocity intentions varied based on the helping source. Hence helping needs to be assigned to those whose responsibility it is to train and help new employees, helping reciprocity needs to be discouraged in the context of a high risk workplace, and a safety conscious helping environment needs to be developed. Saving lives is important, therefore this research is important. The present investigation is part of an important exploration into why new employees might be injured at work and is part of an important journey to reduce the number of health and safety accidents. A message to all the new employees: stay safe.

5 References

Abdelhamid, T. S., & Everett, J. G. (2000). Identifying root causes of construction accidents. *Journal of Construction Engineering and Management, 126*(1), 52-60.

Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: gratitude and relationships in everyday life. *Emotion, 8*(3), 425.

Anderson, N. R., Cunningham-Snell, N. A., & Haigh, J. (1996). Induction training as socialization: Current practice and attitudes to evaluation in British organizations. *International Journal of Selection and Assessment, 4*(4), 169-183.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*(1), 20-39.

Barry, T. (1971). *Industrial engineering study of hazards associated with underground coal mine production. Volume I. Open file report* (No. PB-207226; BM-OFR-4 (I)-72). Bureau of Mines, Washington, DC.

Bartlett, M. Y., & DeSteno, D. (2006). Gratitude and prosocial behaviour helping when it costs you. *Psychological science, 17*(4), 319-325.

Bell, J. L., & Grushecky, S. T. (2006). Evaluating the effectiveness of a logger safety training program. *Journal of Safety Research*, *37*(1), 53-61.

Bentley, T. A., Parker, R. J., Ashby, L., Moore, D. J. & Tappin, D. C. 2002. The role of the New Zealand forestry industry surveillance system in a strategic Ergonomic, Safety and Health Research Programme, *Applied Ergonomics, 33*, 395-403.

Berkowitz, L., & Daniels, L. R. (1963). Responsibility and dependency. *Journal of Abnormal and Social Psychology, 66*, 427-436.

Blader, S. L. & Tyler, T. R. (2009). Testing and extending the group engagement model: Linkages between social identity, procedural justice, economic outcomes, and extra role behavior. *Journal of Applied Psychology, 94*(2), 445-464.

Burt, C. D. (2015). *New Employee Safety: Risk Factors and Management Strategies.* Springer.

Burt, C.D.B., Banks, M. & Williams, S. (2014). The safety risks associated with helping others. *Safety Science, 62*,136-144.

Chang, Y. P., Lin, Y. C., & Chen, L. H. (2012). Pay it forward: Gratitude in social networks. *Journal of Happiness Studies*, *13*(5), 761-781.

Chi, C. Chang, T. & Ting, H. (2005). Accident patterns and prevention measures for fatal occupational falls in the construction industry. *Applied Ergonomics, 36*, 391-400.

Deluga, R. J. (1994). Supervisor trust building, leader-member exchange and organizational citizenship behaviour. *Journal of Occupational and Organizational Psychology, 67*(4), 315-326.

Department of Labour (2001). *Code of Practice for Manual Handling.* Retrieved from http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/manual-handling-code-of-practice-for/manual-handling-cop.pdf

Employment Relations Act, No. 24. (2000). Retrieved from: http://www.legislation.govt.nz/act/public/2000/0024/latest/whole.html

Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Feather, N. T., & Rauter, K. A. (2004). Organizational citizenship behaviours in relation to job status, job insecurity, organizational commitment and identification, job satisfaction and work values. *Journal of occupational and organizational psychology, 77*(1), 81-94.

Fields, A. (2009). *Discovering statistics using SPSS. Sage* publications.

George, J. M., & Bettenhausen, K. (1990). Understanding prosocial behavior, sales performance, and turnover: a group-level analysis in a service context. *Journal of applied Psychology*, *75*(6), 698.

Goodwin, C. J. (2008). *Research in psychology: Methods and design* (5th Ed.). Hoboken, NJ: John Wiley & Sons.

Goranson, R. E., & Berkowitz, L. (1966). Reciprocity and responsibility reactions to prior help. *Journal of Personality and Social Psychology*, *3*(2), 227.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 161-178.

Greenberg, M. S. (1980). A theory of indebtedness. In Gergen, K. J., Greenberg, M. S., & Willis, R. H. (Ed.), *Social Exchange* (pp. 3-26). Springer US.

Groves, W. A., Kecojevic, V. J. & Komljenovic, D. (2007). Analysis of fatalities and injuries involving mining equipment. *Journal of Safety Research*, *38*, 461-470.

Gyekye, S. A., & Salminen, S. (2005). Are "good soldiers" safety conscious? An examination of the relationship between organizational citizenship behaviors and perception of workplace safety. *Social Behavior and Personality: an international journal*, *33*(8), 805-820.

Hämäläinen, P., Saarela, K. L., & Takala, J. (2009). Global trend according to estimated number of occupational accidents and fatal work-related diseases at region and country level. *Journal of safety research*, *40*(2), 125-139.

Hayes, B. E., Perander, J., Smecko, T., & Trask, J. (1998). Measuring perceptions of workplace safety: Development and validation of the work safety scale. *Journal of Safety research*, *29*(3), 145-161.

Institute of Directors (2013). *Managing health and safety risks.* Retrieved from https://www.sitesafe.org.nz/siteSafePDFs/Managing%20health%20and%20safety%20risks_Institute%20of%20Directors.pdf

Jeong, B. Y. (1998). Occupational deaths and injuries in the construction industry. *Applied Ergonomics*, *29*(5), 355-360.

Kanagaretnam, K., Mestelman, S., Nainar, K., & Shehata, M. (2009). The impact of social value orientation and risk attitudes on trust and reciprocity. *Journal of Economic Psychology*, *30*(3), 368-380.

Kincaid, W. H. (1996). Safety in the high-turnover environment. *Occupational Health and Safety*, *65*(22), 24-25.

Leigh, J. P. (1986). Individual and job characteristics as predictors of industrial accidents. *Accident Analysis and Prevention*, *18*(3), 209-216.

Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in personnel and human resources management*, *15*, 47-120.

Lind, S. (2008). Types and sources of fatal and severe non-fatal accidents in industrial maintenance. *International Journal of Industrial Ergonomics, 38*(11), 927-933.

Lu, S. (2014). *Safety voicing: the impact of job insecurity and the differences in severity of safety concerns* (Masters Dissertation). University of Canterbury, Christchurch.

Makin, A. M., & Winder, C. (2008). A new conceptual framework to improve the application of occupational health and safety management systems. *Safety Science*, *46*(6), 935-948.

Mathews, M. A., & Green, J. D. (2010). Looking at me, appreciating you: Self-focused attention distinguishes between gratitude and indebtedness. *Cognition & Emotion*, *24*(4), 710-718.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370.

McCall, B. P., & Horwitz, I. B. (2005). Occupational vehicular accident claims: a workers' compensation analysis of Oregon truck drivers 1990–1997. *Accident Analysis & Prevention, 37*(4), 767-774.

Muchinsky, P. M. (2003). *Psychology Applied to Work* (7th Ed.). Boston, MA: McGraw-Hill.

National Institute for Occupational Safety and Health (2000). *Fourteen-Year-Old Youth Pulled Into Operating Wood Chipper – Florida.* Retrieved from http://www.cdc.gov/niosh/face/In-house/full200021.html

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2005). *Organizational citizenship behavior: Its nature, antecedents, and consequences*. Sage Publications.

Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel psychology, 48*(4), 775-802.

Occupational Safety and Health Administration (2013). *Inspection: 317001667 - Asplundh Tree Expert Co.* Retrieved from https://www.osha.gov/pls/imis/establishment.inspection_detail?id=317001667

Parisi, F. (2007). Reciprocity. In D. Clark (Ed.), *Encyclopedia of law & society: American and global perspectives*. (pp. 1273-1277). Thousand Oaks, CA: Sage Publications, Inc.

Pearce, J.L., & Gregersen, H.B. (1991). Task interdependence and extra role behaviour: A test of the mediating effects of felt responsibility. *Journal of Applied Psychology, 76*(6), 838-844

Podsakoff, P. M., & MacKenzie, S. B. (1994). Organizational citizenship behaviors and sales unit effectiveness. *Journal of marketing research, 31*(3), 351-363.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of management*, *26*(3), 513-563.

Reason, J. (2000). Human error: models and management. *British Medical Journal*, *320*(7237), 768-770.

Root, N. & Hoefer, M. (1979). The first work-injury data available from new BLS study. *Monthly Labor Review*, *102*(1), 76-80.

Rotkirch, A., Lyons, M., David-Barrett, T., & Jokela, M. (2014). Gratitude for help among adult friends and siblings. *Evolutionary Psychology*, *12*(4), 673-686

Smith, P. M. & Mustard, C. A. (2006). How many employees receive safety training during their first year of a new job? *Injury Prevention, 13,* 37-41.

Sparrowe, R. T., & Liden, R. C. (1997). Process and structure in leader-member exchange. *Academy of management Review, 22*(2), 522-552.

Statistics New Zealand (2014). *Injury Statistics – Work-related claims: 2013.* Retrieved from http://www.stats.govt.nz/browse_for_stats/health/injuries/InjuryStatistics_HOTP13.aspx

Sutherland, V. J., & Cooper, C. L. (1988). Sources of work stress. *Occupational stress: Issues and developments in research,* 3-40.

Tesser, A., Gatewood, R., & Driver, M. (1968). Some determinants of gratitude. *Journal of personality and social psychology, 9*(3), 233.

Thomas, E. J. (1957). Effects of facilitative role interdependence on group functioning. *Human Relations, 10*(4), 347-366.

Uhl-Bien, M., & Maslyn, J. M. (2003). Reciprocity in manager-subordinate relationships: Components, configurations, and outcomes. *Journal of Management, 29*(4), 511-532.

Van Zelst, R. H. (1954). The effect of age and experience upon accident rate. *Journal of Applied Psychology, 38*(5) 313-317.

Vaughan, G. M. & Hogg, M. A. (2008). *Introduction to social psychology.* Frenchs Forest, N.S.W: Pearson Education

Wanous, J. P. (1992). *Organizational entry: Recruitment, selection, orientation, and socialization of newcomers.* Prentice Hall.

Wanous, J. P., & Reichers, A. E. (2000). New employee orientation programs. *Human Resource Management Review, 10*(4), 435.

Watkins, P., Scheer, J., Ovnicek, M., & Kolts, R. (2006). The debt of gratitude: Dissociating gratitude and indebtedness. *Cognition & Emotion, 20*(2), 217-241.

Weinstein, N., DeHaan, C. R., & Ryan, R. M. (2010). Attributing autonomous versus introjected motivation to helpers and the recipient experience: Effects on gratitude, attitudes, and well-being. *Motivation and Emotion, 34*(4), 418-431.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of management, 17*(3), 601-617.

Work Safe New Zealand (2015). *Guidance by Industry.* Retrieved from http://www.business.govt.nz/worksafe/information-guidance/guidance-by-industry

Appendix A

Letter of request to companies

xxxx xxxx

xx xxxx

xxxxx

16 April 2015

Dear Mr xxxx,

I am writing to you to invite your company's participation in a research project on Health and Safety in the workplace. Specifically the study is investigating the effect of relationship type on helping reciprocation. As part of our study we require participants who have some Health and Safety awareness and currently hold employment in a workplace which carries some safety risk.

The study involves participants reading four descriptions and responding to questions after reading each. I propose approaching the staff on their lunch break and asking them if they would like to participate. Participation by your staff will be voluntary. The survey will take approximately 10 minutes to complete. Each staff member that participates will be rewarded with a $10 petrol voucher.

We would like to approach staff at both your site. By agreeing to let your staff participate you are consenting to the publication of the results on the basis that no individual, team or organisation is identified.

In return for access to your staff, we will be able to offer you a copy of the final dissertation.

This project is currently awaiting ethics approval. Changes to what has been mentioned here will be communicated to you.

If you require further information please do not hesitate to contact me. I look forward to hearing back from you.

Yours sincerely,

Sarah Adams
sarah.adams@pg.canterbury.ac.nz
03 364 2987 ext. 7187

Appendix B
Experimental materials for Experiment 1

Instructions

There are two sections to this study. **Section 1** involves you reading 4 descriptions **that vary in terms of the nature of the relationship with a helper**. For this section please read a description, and answer the questions that follow, before moving onto the next description.

Section 2 involves answering some questions about yourself, the amount of risk your job has, and the interaction you have with your co-workers.

If you have any questions about this research please contact:

Sarah Adams
sarah.adams@pg.canterbury.ac.nz or +64 3 364 2987 ext. 7187

Section 1

Please try to put yourself in the situation described below.

Your job involves manual handling. Manual handling is defined as any activity requiring a person to lift, lower, push, pull, carry, move, hold, or restrain an object.

One of your co-workers named Jeff helped you learn correct manual handling techniques.

Jeff covered the following:

- how to complete manual handling tasks properly and safely
- the hazards associated with the manual handling
- how to deal with or minimise the manual handling hazards
- how to use equipment such as lifting aids properly and safely
- how to carry out a basic assessment of the task in order to recognise hazardous manual handling
- the principles of safe handling (such as being close to the load)

The following items are about what you might do after Jeff helped you. Please indicate your agreement or disagreement with each statement by circling a number on the scale.

Based on your interaction with Jeff you would…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude towards Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment Jeff on his helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful Jeff was	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help Jeff if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please try to put yourself in the situation described below.

Your job involves manual handling. Manual handling is defined as any activity requiring a person to lift, lower, push, pull, carry, move, hold, or restrain an object.

Your supervisor Jeff helped you learn correct manual handling techniques.

Jeff covered the following:

- how to complete manual handling tasks properly and safely
- the hazards associated with the manual handling
- how to deal with or minimise the manual handling hazards
- how to use equipment such as lifting aids properly and safely
- how to carry out a basic assessment of the task in order to recognise hazardous manual handling
- the principles of safe handling (such as being close to the load)

The following items are about what you might do after Jeff helped you. Please indicate your agreement or disagreement with each statement by circling a number on the scale.

Based on your interaction with Jeff you would…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude towards Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment Jeff on his helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful Jeff was	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help Jeff if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please try to put yourself in the situation described below.

Your job involves manual handling. Manual handling is defined as any activity requiring a person to lift, lower, push, pull, carry, move, hold, or restrain an object.

A co-worker named Jeff was assigned by the organization to be your mentor and helped you learn correct manual handling techniques.

Jeff covered the following:

- how to complete manual handling tasks properly and safely
- the hazards associated with the manual handling
- how to deal with or minimise the manual handling hazards
- how to use equipment such as lifting aids properly and safely
- how to carry out a basic assessment of the task in order to recognise hazardous manual handling
- the principles of safe handling (such as being close to the load)

The following items are about what you might do after Jeff helped you. Please indicate your agreement or disagreement with each statement by circling a number on the scale.

Based on your interaction with Jeff you would…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude towards Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment Jeff on his helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful Jeff was	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help Jeff if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please try to put yourself in the situation described below.

Your job involves manual handling. Manual handling is defined as any activity requiring a person to lift, lower, push, pull, carry, move, hold, or restrain an object.

Your organisation paid for Jeff from Ergonomics NZ to help you learn correct manual handling techniques.

Jeff covered the following:

- how to complete manual handling tasks properly and safely
- the hazards associated with the manual handling
- how to deal with or minimise the manual handling hazards
- how to use equipment such as lifting aids properly and safely
- how to carry out a basic assessment of the task in order to recognise hazardous manual handling
- the principles of safe handling (such as being close to the load)

The following items are about what you might do after Jeff helped you. Please indicate your agreement or disagreement with each statement by circling a number on the scale.

Based on your interaction with Jeff you would…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude towards Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted to Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment Jeff on his helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful Jeff was	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help Jeff if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help Jeff	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Section 2: Questions about you and your job

1. Age _____

2. You are? Male ☐ Female ☐

3. How long have you worked in your current job? _____ years, _____ months

4. How many co-workers do you have?_____

5. Is manual handling part of your job? Yes ☐ No ☐

Work Safety Scale: Listed below are items which could describe your job. For each item please circle the number which indicates the extent to which you disagree or agree for your job.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Dangerous	**1**	**2**	**3**	**4**	**5**
Safe	**1**	**2**	**3**	**4**	**5**
Hazardous	**1**	**2**	**3**	**4**	**5**
Risky	**1**	**2**	**3**	**4**	**5**
Unhealthy	**1**	**2**	**3**	**4**	**5**
Could get hurt easily	**1**	**2**	**3**	**4**	**5**
Unsafe	**1**	**2**	**3**	**4**	**5**
Fear for health	**1**	**2**	**3**	**4**	**5**
Chance of death	**1**	**2**	**3**	**4**	**5**
Scary	**1**	**2**	**3**	**4**	**5**

Team Interaction Scale: Jobs vary in terms of the amount of interaction that is required with other team members or co-workers. The following items are about how much **job related interaction you have with your team members or co-workers**. Please indicate how much you agree or disagree with each of the statements.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
I work closely with my team/co-workers in doing my work	**1**	**2**	**3**	**4**	**5**
I frequently have to coordinate my efforts with my team/co-workers	**1**	**2**	**3**	**4**	**5**
My own performance is dependent on receiving accurate information from my team/co-workers	**1**	**2**	**3**	**4**	**5**
The way I perform my job has a significant impact on my team/co-workers	**1**	**2**	**3**	**4**	**5**
My job requires me to consult with my team/co-workers fairly frequently	**1**	**2**	**3**	**4**	**5**

Appendix C

Changes to Team Member Interaction Scale items

Original Item	Adapted Item
I work closely with others in doing my work.	I work closely with my team/co-workers in doing my work
I frequently must coordinate my efforts with others.	I frequently have to coordinate my efforts with my team/co-workers
My own performance is dependent on receiving accurate information from others.	My own performance is dependent on receiving accurate information from my team/co-workers
The way I perform my job has a significant impact on others.	The way I perform my job has a significant impact on my team/co-workers
My work requires me to consult with others fairly frequently	My job requires me to consult with my team/co-workers fairly frequently

Appendix D

Information sheet and consent form

Department of Psychology
Telephone: +64 3 364 2987 ext. 7187
Email: sarah.adams@pg.canterbury.ac.nz
11 May 2015

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

The Effect of Relationship Type on Helping Reciprocation

Information Sheet

I am Sarah Adams, studying towards a Master of Science in Applied Psychology. I am researching Health and Safety in the workplace, specifically investigating the effect that relationship type has on helping reciprocation.

Your involvement in this project will involve reading some short descriptions and responding to some questions. There are two sections to this survey. Section 1 involves you reading 4 descriptions that vary in terms of the nature of the relationship with a helper. For this section you are to read each description and complete the questions that follow. Section 2 involves answering some questions about yourself, the amount of risk your job has, and the interaction you have with your co-workers.

You may receive a copy of the project results by contacting the researcher at the conclusion of the project. Participation is voluntary and you have the right to withdraw at any stage without penalty. If you withdraw, I will remove information relating to you. As this survey is anonymous, withdrawal will not be possible once the survey pack has been returned to the researcher.

A dissertation is a public document and will be available through the UC Library. The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation; your identity will not be made public. To ensure anonymity and confidentiality please do not write your name on the survey documents. Only myself and my supervisors Associate Professor Chris Burt and Associate Professor Katharina Naswall will have access to the data collected. The data will be stored indefinitely, locked securely in a file cabinet and password protected on a computer.

The project is being carried out as a requirement for my dissertation under the supervision of Associate Professor Chris Burt, who can be contacted at christopher.burt@canterbury.ac.nz. He will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

As a thank you for completing the survey you will be given a $10 petrol voucher.

Department of Psychology
Telephone: +64 3 364 2987 ext. 7187
Email: sarah.adams@pg.canterbury.ac.nz
11 May 2015

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

The Effect of Relationship Type on Helping Reciprocation

Consent Form

- I have been given a full explanation of this project and have had the opportunity to ask questions.
- I understand what is required of me if I agree to take part in the research.
- I understand that participation is voluntary and I may withdraw at any time without penalty.
- Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- I understand that any information or opinions I provide will be kept confidential to the researcher and her supervisors Associate Professor Chris Burt and Associate Professor Katharina Naswall and that any published or reported results will not identify the participants or their company.
- I understand that a dissertation is a public document and will be available through the UC Library.
- I understand that all data collected for the study will be kept in locked and secure facilities and in password protected electronic form and will be stored indefinitely.
- I understand that I am able to receive a report on the findings of the study by contacting the researcher at the conclusion of the project.
- I understand that I can contact the researcher Sarah Adams at sarah.adams@pg.canterbury.ac.nz or her supervisor Associate Professor Chris Burt, who can be contacted at christopher.burt@canterbury.ac.nz for further information.
- If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

By completing this survey you are agreeing to participate in this research project.

Appendix E

Debrief Sheet for Experiments 1 and 2

Department of Psychology
Telephone: +64 3 364 2987 ext. 7187
Email: sarah.adams@pg.canterbury.ac.nz
11 May 2015

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Debrief Sheet

Thank you for participating in my research project. The purpose of this project was to investigate why new employees tend to have more health and safety accidents in the early stages of employment.

When new employees enter an organisation they need more help than others in order to understand the tasks associated with their job, and the rules and procedures associated with the organisation.

In general when a person is helped by someone they feel grateful for that help, and sometimes feel indebted towards the person that provided the help. This debt can lead to a reciprocation of helping behaviour in order to repay that debt. Put simply, new employees are typically given a lot of help when they first arrive in a job, and this help can prompt the new employee to attempt to help, to repay the debt.

Reciprocal helping behaviour is good where there are no safety risks. However in a high risk environment a new employee is perhaps the least equipped to exhibit helping reciprocity. The new employee may lack the situational awareness, knowledge, acclimatization, and familiarity with safe procedures to help others - putting themselves or others at risk.

Thanks again for your participation. You may receive a copy of the project results by contacting me at the conclusion of the project.

Appendix F

Experimental materials for Experiment 2

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Instructions

There are two sections to this study. **Section 1** involves you reading 4 descriptions **that vary in terms of the nature of the relationship with a helper**. For this section please read a description, and answer the questions that follow, before moving onto the next description.

Section 2 involves answering some questions about yourself, the amount of risk your job has, and the interaction you have with your co-workers.

If you have any questions about this research please contact:

Sarah Adams
sarah.adams@pg.canterbury.ac.nz or +64 3 364 2987 ext. 7187

Section 1

Based on the description below please indicate your agreement or disagreement with each statement by circling a number on the scale.

Imagine that during your initial employment period, specifically the first 3 months on the job. ***A member of the Human Resources induction team***…

…helped you understand how to solve work related problems

…helped you settle in and become familiarised with the job

…and made sure you had important information

You would be likely to…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment them on their helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful they were	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help them if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help them	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Based on the description below please indicate your agreement or disagreement with each statement by circling a number on the scale.

Imagine that during your initial employment period, specifically the first 3 months on the job. ***Your Supervisor…***

…helped you understand how to solve work related problems

…helped you settle in and become familiarised with the job

…and made sure you had important information

You would be likely to…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment them on their helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful they were	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help them if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help them	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Based on the description below please indicate your agreement or disagreement with each statement by circling a number on the scale.

Imagine that during your initial employment period, specifically the first 3 months on the job. ***A mentor assigned to you by the organisation…***

…helped you understand how to solve work related problems

…helped you settle in and become familiarised with the job

…and made sure you had important information

You would be likely to…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment them on their helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful they were	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help them if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help them	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Based on the description below please indicate your agreement or disagreement with each statement by circling a number on the scale.

Imagine that during your initial employment period, specifically the first 3 months on the job. ***One of your co-workers…***

…helped you understand how to solve work related problems

…helped you settle in and become familiarised with the job

…and made sure you had important information

You would be likely to…	Strongly disagree			Neither agree/ disagree			Strongly agree
…feel gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…express your gratitude	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…feel indebted	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…be motivated to help other co-workers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…compliment them on their helpfulness	**1**	**2**	**3**	**4**	**5**	**6**	**7**
…tell others how helpful they were	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… would help them if you had a chance to	**1**	**2**	**3**	**4**	**5**	**6**	**7**
… try to find a way to help them	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Section 2: Questions about you and your job

1. Age _____
2. You are? Male □ Female □
3. How long have you worked in your current job? _____ years, _____ months
4. How many co-workers do you have?_____
5. Is manual handling part of your job? Yes □ No □

Work Safety Scale: Listed below are items which could describe your job. For each item please circle the number which indicates the extent to which you disagree or agree for your job.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Dangerous	**1**	**2**	**3**	**4**	**5**
Safe	**1**	**2**	**3**	**4**	**5**
Hazardous	**1**	**2**	**3**	**4**	**5**
Risky	**1**	**2**	**3**	**4**	**5**
Unhealthy	**1**	**2**	**3**	**4**	**5**
Could get hurt easily	**1**	**2**	**3**	**4**	**5**
Unsafe	**1**	**2**	**3**	**4**	**5**
Fear for health	**1**	**2**	**3**	**4**	**5**
Chance of death	**1**	**2**	**3**	**4**	**5**
Scary	**1**	**2**	**3**	**4**	**5**

Team Interaction Scale: Jobs vary in terms of the amount of interaction that is required with other team members or co-workers. The following items are about how much **job related interaction you have with your team members or co-workers**. Please indicate how much you agree or disagree with each of the statements.

	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
I work closely with my team/co-workers in doing my work	**1**	**2**	**3**	**4**	**5**
I frequently have to coordinate my efforts with my team/co-workers	**1**	**2**	**3**	**4**	**5**
My own performance is dependent on receiving accurate information from my team/co-workers	**1**	**2**	**3**	**4**	**5**
The way I perform my job has a significant impact on my team/co-workers	**1**	**2**	**3**	**4**	**5**
My job requires me to consult with my team/co-workers fairly frequently	**1**	**2**	**3**	**4**	**5**